

Astrophysics and Geophysics

AUTOMATED CLASSIFICATION OF GALAXIES USING THE SHAPELET FUNCTION, Nick J. Jurasek, Dr. Shaukat N. Goderya*, Department of Physics, Illinois State University, Normal, IL 61790, goderya@phy.ilstu.edu

The goal of this project is to produce a computer program that can autonomously classify a large number of galaxies faster than can be done by hand. We are using the shapelet function as our basis for classification. Thus far we have written code that can compute the center of the galaxy, the best fit ellipse, and the first 25 basis functions. We are currently working with galaxy data to obtain several sets of shapelet coefficients for known types of galaxies. Using these coefficients we hope to be able to classify different categories of galaxies; ie. Spiral, Bar, and Elliptical. We will use an artificial neural network as our classifier. This talk will present the work that we have accomplished so far.